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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,974	06/11/2007	Jens Ehreke	04077/0205260-US0	2786

7590 10/05/2010  
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HUNTINGTON, NY 11743

EXAMINER
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CHU, KIM KWOK

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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10/05/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,974	<b>Applicant(s)</b> EHREKE ET AL.	
	<b>Examiner</b> Kim-Kwok CHU	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Pre-Amendment filed on Jun 1, 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-12, 18, 19 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 2 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

2. Claims 1, 3-12, 18, 19 and 21-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by Grot et al. (U.S. Patent 6,005,691).

3. Grot teaches a data carrier having all of the structures as recited in claims 1, 3-12 and 18. Grot teaches the following:

Regarding Claim 1, the carrier 100 (Figs. 3A and 3; column 4, lines 1 and 2) having a holographic data memory 103 (Figs. 3A and 4A; column 4, line 3) in a form of a volume hologram (Fig. 4; abstract) comprising: a core layer 113 comprising the holographic data memory (DOE; column 4, line 3) in hologram (Fig. 3A); and an adjacent layer 109 (Fig. 3B) laminated to the core layer 113, the adjacent layer 109 having an inner surface (Fig. 3B; inner surface next to 113), the inner surface facing the core layer 113 and having includes a roughness (grating shape unevenness) before lamination to the core layer 113 that causes a wavelength shift (inherent feature where a

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grating/unevenness surface causes wavelength shift) of the image 103 that is reconstructed (read) from the volume hologram (image 103 is seen with light shifted).

Regarding Claim 3, the roughness of the inner surface characterized in that the roughness is stochastically distributed (Fig. 3B; the surface of the grating has a microscopic view of random roughness).

Regarding Claim 4, the inner surface 109 includes a characterized in that the roughness profile having a is regular jagged relief (Fig. 3B).

Regarding Claim 5, the adjacent layer 109 (Fig. 3A) includes a first area (edges) having a first roughness profile (vertical) and a second area (horizontal) having a second roughness profile, wherein the first roughness profile is different from the second roughness profile (Fig. 3B; grating has a roughness shape of two different directions)

Regarding Claim 6, the first (vertical) and second (horizontal) areas display characterized in that the areas of the layer directly adjacent to the core layer 113 with different roughness displays information in the form of numbers, letters, geometric forms shapes or images (roughness displays a grating shape).

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Regarding Claim 7, the adjacent layer 109 comprises at least one thermoplastically processible plastic material (Fig. 3B; layer 109 is made of plastic).

Regarding Claim 8, the adjacent layer comprises a paper-like material (thin material) having at least one plastic laminated layer (Fig. 3B).

Regarding Claim 9, the adjacent layer 109 is imprinted (layers are bonded with pressure).

Regarding Claim 10, the holographic data memory 100 includes at least one area 113 that is locally shrunken or swollen (Fig. 3B; layer 113 is not flat).

Regarding Claim 11, the at least one area that is shrunken or swollen shrinking or swelling includes a gradient (up/down shape) towards the data carrier surface 113 (Fig. 3B).

Regarding Claim 12, an increased characterized in roughness of the directly adjacent layer corresponds to an increased causes a shift of the wavelength of the image reconstructed image to shorter wavelength.

Regarding Claim 18, the thermoplastically processible plastic material includes polycarbonate (PC) (Fig. 3B; column 3, lines 25 and 26; polycarbonate is a plastic material).

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4. Claims 19 and 21-24 have limitations similar to those treated in the above rejection, and are met by the reference as discussed above.

***Allowable Subject Matter***

5. Claims 2 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 2 and 20, the prior art of record fails to teach or fairly suggest a data carrier having following feature:

the data having an adjacent layer characterized the average roughness of the inner surface is about 5 um to 25 um so as to result in a wavelength shift of about 20 nm.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

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***Related Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

King et al. (6,721,076) is pertinent because King teaches a holographic storage means having a plurality of layers.

Curtis (6,695,213) is pertinent because Curtis teaches a holographic storage means containing security information.

Yagi et al. (6,556,531) is pertinent because Yagi teaches a holographic storage means.

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8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/  
Examiner AU2627  
September 29, 2010  
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627